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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/633,681	08/07/2000	Dieter Thelen	3896	3613

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EXAMINER

BELLAMY, TAMIKO D

ART UNIT	PAPER NUMBER
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2856

11

DATE MAILED: 04/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/633,681

Applicant(s)

THELEN ET AL.

Examiner

Tamiko D. Bellamy

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-31 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 and 8. 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The corrected or substitute drawings were received on 2/19/03. These drawings are accepted.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1-5, 7-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bandhopadhyay et al. (4,930,348).

With respect to claims 1, 23, and 24, Bandhopadhyay et al. discloses in Figs. 2 and 4 an inner ring 50, an upper suspension plate 36, two regions 50, 52 that are interconnected by webs 48 (col. 2, lines 63-65), and a means for securing the transducer 62 in a place between the outer plate 52 and the ring 50 (col. 5, lines 17-19). The inner ring 50 is equivalent to a mounting plate. The upper suspension plate 52 is equivalent to an outer frame; and the transducer 62 is equivalent to a translational vibration transducer. Bandhopadhyay et al. lacks the detail of a mounting fixture. However, the inner ring 50 that Bandhopadhyay et al. uses receives the rotating body and defines a mounting plane. Therefore the inner ring that Bandhopadhyay et al. uses is a combination of a mounting plate and a mounting fixture. It is well known in the art to use a mounting plate for a

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balancing a rotational body that provides a mounting fixture. Therefore, it would have been obvious to one of ordinary skill in the art to provide Bandhopadhyay et al. with a mounting fixture that is arranged on the mounting plate, so that the rotational body can rotate about an axis perpendicular to the plate plane.

With respect to claims 2 and 10-15, and 17, Bandhopadhyay et al. discloses in Fig. 2 the webs 48 are aligned and lie in the same plane as bores 44 and 44', and the webs 48 comprise flexure elements within the suspension plate 36 (col. 3, lines 2, 3; 24-26). Furthermore, Bandhopadhyay et al. discloses the webs 48, 48' are on each side of the spindle 32 and lie in the same plane while acting as a spring in a direction transverse to the plane (col. 4, lines 35-38). With respect to further limitation of claims 10-15, and 17, Bandhopadhyay et al. lacks the detail of a second and third pair of webs, a flexible bar having a square cross-sectional shape, and a web with a notch. However, duplicating the components and a change in shape of a prior art device is a design consideration within the skill of the art. (See respectively) ((In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960)) and (In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966))).

With respect to claims 3-5, and 9 Bandhopadhyay et al. discloses in Figs. 2 and 5 a suspension cartridge 26 comprising an upper suspension plate 36 and a lower suspension plate 38 connected by a spacer 40 that is secured to plates 36, 38 by welding (col. 2, lines 49-53). Furthermore, Bandhopadhyay et al. discloses a lower suspension plate 38 including a transducer 62' (col. 3, lines 17-24). The upper suspension plate 36 is equivalent to an outer frame. The transducer 62' is equivalent to a second transducer. Bandhopadhyay et al. makes use of coupling the lower suspension plate 38, comprising a

transducer 62', to the upper suspension plate 36. Therefore, Bandhopadhyay et al. makes use of a second transducer that is coupled to the outer frame as claimed. With respect to further limitations of claims 4, and 5, Bandhopadhyay et al. lacks the detail of the second transducer having a second measuring axis that is perpendicular from to the plate plane and offset from the pivot axis. However, Bandhopadhyay et al. discloses that the transducer mounting is located 90 degrees from the webs 48, and the transducer 62' and its mounting is the same as the upper plate 36 (col. 3, lines 3-5; 23-24). Therefore, the transducer 62' is perpendicular to the plate 36. The location of a transducer requires minimum skill in the art and can be determined through experimental test. With respect to further limitations of claim 9, duplicating the components of a prior art device is a design consideration within the skill of the art. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). Therefore, it would have been obvious to one of ordinary skill in the art to provide Bandhopadhyay et al. with a plurality of transducers that are offset from the pivot axis, so that the balancing device accurately detects only pivot vibrations without the interference of rotational vibrations.

With respect to claims 7 and 25, Bandhopadhyay et al. discloses in Figs. 4 and 5 that a flat 54 is formed on the inner ring 50, a bore 56 that is threaded to accept a screw 58 secured by locknut 60, and transducer 62 that is held against the flat 54 and a preload force is applied by the screw 58 acting through a steel ball (col. 3, lines 5-11). The inner ring 50 is equivalent to a mounting plate. Furthermore, the combination of the screw 58, the ball 64, and the locknut 60 provides a means for coupling the transducer 62 between the inner ring 50 and the outer plate 52. Bandhopadhyay et al. lacks detail of a flexibly

bendable coupling rod used to couple the transducer to the mounting plate. However, it is well known in the art to use a coupling rod within a balance device integrated components. Therefore, it would have been obvious to one of ordinary skill in the art to provide Bandhopadhyay et al. with a flexibly bendable coupling rod used as a means for integrating the transducer to the mounting plate and the outer plate.

With respect to claim 8, Bandhopadhyay et al. in Figs. 4 and 5 that the transducer 62 is held against the flat 54 and a preload force is applied by the screw 58 (col. 3, lines 5-11). Bandhopadhyay et al. lacks the detail of a transducer that is slidably adjustable. However, adjustability, where desirable, is a modification that is within the skill of the art. In re Stevens, 212 F.2d 197, 101 USPQ 284 (CCPA 1954).

With respect to claim 16, Bandhopadhyay et al. discloses in Fig. 2 an inner ring 50 that is equivalent to a mounting plate, and two regions 50,52 that are interconnected by webs 48 (col. 2, lines 63-65). Bandhopadhyay et al. lacks the detail of the mounting plate having a rectangular shape, and a first and second pair of webs. Bandhopadhyay et al. uses a mounting plate that is circular in shape. However, a change in the shape of a prior art device is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Although, Bandhopadhyay et al. discloses one pair of webs, duplicating the components of a prior art device is a design consideration within the skill of the art. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). Therefore, it would have been obvious to one of ordinary skill in the art to provide Bandhopadhyay et al. with a mounting plate having a square shape, so that device can have a plurality of web pairs attached along the sides.

With respect to claims 18-20, Bandhopadhyay et al. discloses in Fig. 2 a rotating a rotary part about a vertical axis (col. 1, lines 11-14), the webs 48, 48' are on each side of the spindle 32 and lie in the same plane while acting as a spring in a direction transverse to the plane (col. 4, lines 35-38). As shown in figure 2, the webs are arranged at the intersection of the circular inner ring 50, and the inner ring 50 lies within the horizontal plane.

With respect to claim 19, Bandhopadhyay et al. discloses in Fig. 2 a rotating a rotary part about a vertical axis (col. 1, lines 11-14). As shown in figure 2, the inner ring 50 lies within the horizontal plane. The inner ring 50 is equivalent to a mounting plate. Bandhopadhyay et al. lacks the detail of the rotational axis that is horizontal, and the plate plane that is vertical. However, it is well known in the art to use a rotary part of a balancing machine that rotates along a vertical or horizontal axis. Therefore, it would have been obvious to one of ordinary skill in the art to provide Bandhopadhyay et al. with a rotary part that rotates along the horizontal axis, so that the device can measure vibrational forces that occur when the rotary part is unbalanced.

With respect to claims 21 and 22, Bandhopadhyay et al. discloses in Fig. 2 the webs 48, 48' are on each side of the spindle 32 and lie in the same plane while acting as a spring in a direction transverse to the plane (col. 4, lines 35-38). With respect to further limitation of claim 22, Bandhopadhyay et al. lacks the detail of webs having a rectangular cross-sectional shape. However, a change in the shape of a prior art device is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Therefore, it would have been obvious to one of ordinary skill in the art to

provide Bandhopadhyay et al. with webs having a rectangular cross-sectional shape, so that the balancing device has webs that resist bending due to vibrational forces that occur when the rotating body is unbalanced.

With respect to claim 26, Bandhopadhyay et al. discloses a means for securing the transducer 62 in a place between the outer plate 52 and the ring 50 (col. 5, lines 17-19), a lower suspension plate 38 that includes a transducer 62', and the lower plate 38 does not have a mounting flange (col. 3, lines 17-24). Since the lower plate 38 does not contain a mounting plate, the transducer 62' functions as a transducer that detects the pivotal vibrations of webs 48'.

The transducer 62 is equivalent to a translational vibration transducer; and transducer 62' is equivalent to a pivotal vibration transducer.

With respect to claims 27-31, Bandhopadhyay et al. discloses all of claims except for a third and second pair of webs located on opposite sides of the pivot axis. However, duplicating the components of a prior art device is a design consideration within the skill of the art. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). Therefore, it would have been obvious to one of ordinary skill in the art to provide Bandhopadhyay et al. device comprising a plurality of webs, so that the balancing device that has a mounting plate with added support.

Response to Arguments

4. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection. It is the examiners position that claims 1-5, and 7-31 are not patentable over the newly applied art of Bandhopadhyay et al. (4,930,348).

Allowable Subject Matter

5. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to claim 6, the specific limitation as to an mounting plate comprising a plate body and an extension arm that protrude outwardly from a plate body, an outer frame comprising a frame protrusion that protrudes away from the plate plane, and a second transducer that is connected to the free of the extension arm is not taught and/or made obvious by the prior art. Prior art makes use of a mounting plate and an outer frame; however, the use of an mounting plate with extension arm and a outer frame portion that protrudes away from the plate body is novel within the art.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamiko D. Bellamy whose telephone number is (703) 305-4971. The examiner can normally be reached on Monday through Friday 9:00 AM to 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

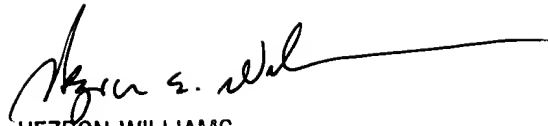
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Tamiko Bellamy

T.B.
April 10, 2003

A handwritten signature in black ink, appearing to read "Hezron Williams", with a long horizontal line extending to the right.

HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800